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### Claims

1. A method of operating a system for analysing the condition of a machine having a rotating shaft (8) and a measuring point (12); the system comprising a client part (4, 14, 19), a supplier part (20, 28) and means for exchanging information between said client part and said supplier part (20, 28); said client part comprising:
- at least one sensor (10) attachable on or at said measuring point (12) for generating said measurement data dependent on rotation of said shaft; and
  - an analysis apparatus (14) connectable to said at least one sensor for analysing the condition of the machine on the basis of said measurement data; said analysis apparatus (14) having
    - a data processing means for processing condition data dependent on said measurement data; said data processing means comprising means for performing a plurality of condition monitoring functions (F1, F2, Fn); wherein at least one of said plurality of condition monitoring functions (F1, F2, Fn) is a restricted function having a disabled state and an enabled state; said disabled state prohibiting complete execution of said condition monitoring function; and said enabled state allowing execution; wherein the apparatus is arranged to allow a limited amount of use of the at least one restricted condition monitoring function; and
    - a logger for registering use of said at least one restricted condition monitoring function (F1, F2, Fn); wherein
      - the apparatus is arranged to change the state of a restricted condition monitoring function from the enabled state to the disabled state when said registered use indicates that the limited amount of use has been spent;
    - a communication port (16) coupled to said data processing means;
    - a user interface (102, 106, 103, 182) coupled to said data processing means for enabling user interaction;
- the method comprising:

5 displaying a list of available functions via a user interface (102, 106, 103, 104, 182) with an indication about status for the displayed functions (S120);  
allowing a user to request for an additional amount of use of at least one restricted condition monitoring function (S130);  
generating a request for an additional amount of usage of said at least one  
10 restricted condition monitoring function (S140, S470) so that said request includes information indicative of said at least one restricted condition monitoring function and/or so that said request includes information indicative of said analysis apparatus;  
supplying said request on said communication port (16) for delivery to said supplier part (20, 28);  
15 receiving said request at said supplier part (S480, 20, 28);  
establishing, at said supplier part (20, 28), whether to grant said request ;  
delivering, from said supplier part (S530, 20, 28), a key associated with an additional amount of use of at least one restricted condition monitoring function when said establishing step results in a grant of said request (S180);  
20 receiving said key at said client part (S540, 4, 14, 19);  
performing a key verification procedure at said client part (S200, S550, 560, 570, 4, 14, 19);  
causing said client part analysis apparatus (14) to change a parameter controlling an amount of allowed use in response to said received key code when  
25 said key verification procedure results in an acceptance of said received key (S220, S590).

2. The method according to claim 1, wherein

30 said request is generated so that it includes information indicative of a desired additional amount of usage and information indicative of said at least one restricted condition monitoring function. and/or information indicative of an identity of said analysis apparatus.

3. The method according to claim 1 or 2, wherein

5           said request is generated so that it includes information indicative of a desired additional amount of usage and information indicative of an identity of said analysis apparatus.

4. The method according to claim 1, 2 or 3, wherein

10           said key is generated so that it comprises information resulting from a calculation involving information in said request.

5. The method according to claim 1, 2, 3 or 4, wherein

15           said key is generated so that it comprises information resulting from a calculation involving information identifying said at least one restricted condition monitoring function and/or information indicative of an identity of said analysis apparatus.

6. The method according to any of claims 1 - 5, wherein

20           said request is generated so that it includes payment information.

7. The method according to any of claims 1 - 6, wherein

25           said key is generated so that it comprises information which is at least partly encrypted.

8. The method according to any of claims 1 - 7, wherein

            said request is generated by means of user interaction involving a user interface (102, 106, 103, 104, 182) coupled to said data processing means.

30   9. The method according to any of claims 1 - 8, further comprising the step of

            requesting a user to enter a key code associated with at least one of said condition monitoring functions.

10. The method according to any of claims 1 - 8, wherein

5           said key code is received via said communication port (16) when connected to a communications network (18).

11. The method according to any of claims 1 - 10, wherein

10           said key code is delivered from said supplier part (20, 28) by means of a communications network (18).

12. The method according to claim 10 or 11, wherein

            communications network (18) comprises a public switched telephone network and/or the Internet.

15           13. A system for analysing the condition of a machine having a rotating shaft (8) and a measuring point (12); the system comprising a client part connectable to a communications network (18) for communication with a supplier part (20); said client part comprising:

20           at least one sensor (10) attachable on or at said measuring point (12) for generating said measurement data dependent on rotation of said shaft;

            an analysis apparatus (14) for analysing the condition of the machine on the basis of said measurement data; said analysis apparatus (14) having

25           a data processing means for processing condition data dependent on said measurement data; said data processing means comprising means for performing a plurality of condition monitoring functions (F1, F2, Fn); and

            a logger for registering use of at least one of said condition monitoring functions (F1, F2, Fn);

30           a communication port (16) coupled to said data processing means and connectable to said communications network (18) for communication with said supplier part computer (20);

            a user input/output interface (102, 106, 103, 182) coupled to said data processing means for enabling user interaction;

5 means (50, 60, 70, 80, 132) for generating a request for an amount of usage of at least one of said condition monitoring functions (F1, F2, Fn); said request generating means being actuatable by said user input/output interface (102, 106, 103, 182); wherein

10 said analysis apparatus (14) is adapted to supply said request to said communication port (16) for delivery to said supplier part computer (20); (18);

means (50, 60, 70, 80, 132, 16) for receiving a key associated with at least one of said condition monitoring functions;

15 means (50, 60, 70, 80, 132, 16) for performing a key verification procedure;

means (50, 60, 70, 80, 132, 16) for causing said analysis apparatus (14) to change a parameter controlling an amount of allowed use in response to said received key code when said key verification procedure results in an acceptance of said received key code.

20 14. The system according to claim 13, further comprising

means for causing said analysis apparatus (14) to display a list of condition monitoring functions with an indication of whether an individual condition monitoring function is disabled or enabled.

25 15. The system according to claim 13 or 14, further comprising

means for causing said analysis apparatus (14) to enable a user to buy usage of a selected condition monitoring function (S130).

30 16. The system according to any of claims 13 - 15, wherein

said at least one input includes an input adapted to receive shock pulse measurement data; said adapted input comprising means for treatment of said shock pulse measurement data and delivery of said treated data to said data processing means.

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17. The system according to any of claims 13 - 16, wherein

said plurality of condition monitoring functions (F1, F2,Fn) includes two or three or more functions selected from the group consisting of: vibration analysis, temperature analysis, shock pulse measuring, spectrum analysis of shock pulse measurement data, Fast Fourier Transformation of vibration measurement data, graphical presentation of condition data on a user interface, storage of condition data in a writeable information carrier on said machine, storage of condition data in a writeable information carrier in said apparatus, tachometering, imbalance detection, misalignment detection.

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18. The system according to any of claims 13 - 16, wherein

said plurality of condition monitoring functions (F1, F2,Fn) includes a function for imbalance detection.

20 19. The system according to claim 18, wherein

said plurality of condition monitoring functions (F1, F2,Fn) includes a function for balancing.

20. The system according to any of claims 13 - 16, wherein

25 said plurality of condition monitoring functions (F1, F2,Fn) includes a function for misalignment detection.

21. The system according to claim 20, wherein

30 said plurality of condition monitoring functions (F1, F2,Fn) includes a function for alignment.

22. An apparatus for analysing the condition of a machine having a rotating shaft (8) and a measuring point (12); comprising:

5 at least one input for receiving measurement data from a sensor for surveying said measuring point of the machine; said measurement data being dependent on rotation of said shaft;

data processing means for processing condition data dependent on said measurement data; said data processing means comprising means for performing a  
10 plurality of condition monitoring functions (F1, F2,Fn);

a logger for registering use of at least one of said condition monitoring functions (F1, F2,Fn); said registration of use affecting a parameter indicative of an allowed amount of use of said at least one of said condition monitoring functions (F1, F2, Fn);

15 a communication port (16) coupled to said data processing means and connectable to a communications network (18);

means (50, 60, 70, 80, 132, 16) for receiving, on said communication port (16), a key code associated with at least one of said condition monitoring functions;

20 means (50, 60, 70, 80, 132, 16) for performing a key code verification procedure;

means (50, 60, 70, 80, 132, 16) for causing said analysis apparatus (14) to change said parameter in response to said received key code when said key verification procedure results in an acceptance of said received key code.

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23. The apparatus according to claim 22, further comprising

means for causing said analysis apparatus (14) to display a list of condition monitoring functions with an indication of whether an individual condition  
30 monitoring function is disabled or enabled.

24. The apparatus according to any of claims 22 -23, wherein

said at least one input includes an input adapted to receive shock pulse measurement data; said adapted input comprising means for treatment of said shock

5 pulse measurement data and delivery of said treated data to said data processing means.

25. The apparatus according to any of claims 22 -24, wherein

10 said plurality of condition monitoring functions (F1, F2,Fn) includes two or three or more functions selected from the group consisting of: vibration analysis, temperature analysis, shock pulse measuring, spectrum analysis of shock pulse measurement data, Fast Fourier Transformation of vibration measurement data, graphical presentation of condition data on a user interface, storage of condition data in a writeable information carrier on said machine, storage of condition data in a  
15 writeable information carrier in said apparatus, tachometering, imbalance detection, misalignment detection.

26. The apparatus according to any of claims 22 -24, wherein

20 said plurality of condition monitoring functions (F1, F2,Fn) includes a function for imbalance detection.

27. The apparatus according to claim 26, wherein

said plurality of condition monitoring functions (F1, F2,Fn) includes a function for balancing.

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28. The apparatus according to any of claims 22 - 27, wherein

said plurality of condition monitoring functions (F1, F2,Fn) includes a function for misalignment detection.

30 29. The apparatus according to claim 28, wherein

said plurality of condition monitoring functions (F1, F2,Fn) includes a function for alignment.

30. The apparatus according to any of claims 22 - 29, wherein:



5           said logger is adapted to store at least two parameters (Use\_F<sub>1</sub>, Use\_F<sub>2</sub>);  
          a first one of said at least two parameters being associated with an  
amount of use of a first condition monitoring function (F<sub>1</sub>, F<sub>2</sub>, F<sub>n</sub>), and  
          a second one of said at least two parameters being associated with an  
amount of use of a second condition monitoring function (F<sub>1</sub>, F<sub>2</sub>, F<sub>n</sub>).

10           31. An apparatus for analysing the condition of a machine having a rotating shaft (8)  
and a measuring point (12), comprising:

          at least one input for receiving measurement data from a sensor for  
surveying said measuring point of the machine; said measurement data being  
15   dependent on rotation of said shaft;

          data processing means for processing condition data dependent on said  
measurement data; said data processing means comprising means for performing a  
plurality of condition monitoring functions (F<sub>1</sub>, F<sub>2</sub>, F<sub>n</sub>); and

          a logger for registering use of at least one of said condition monitoring  
20   functions (F<sub>1</sub>, F<sub>2</sub>, F<sub>n</sub>); said registration of use affecting a parameter indicative of an  
allowed amount of use of said at least one of said condition monitoring functions  
(F<sub>1</sub>, F<sub>2</sub>, F<sub>n</sub>);

          a user interface (102, 106, 103, 104, 182) coupled to said data  
processing means for enabling user interaction;

25           means for causing said user interface (102, 106, 103, 104, 182) to  
request a user to enter a key code associated with at least one of said condition  
monitoring functions;

          means (50, 60, 70, 80, 132, 16) for receiving a key code associated with  
at least one of said condition monitoring functions via said user interface (102, 106,  
30   103, 104, 182);

          means (50, 60, 70, 80, 132, 16) for performing a key verification  
procedure;

          means (50, 60, 70, 80, 132, 16) for causing said analysis apparatus (14)  
to change said parameter controlling an amount of allowed use in response to said

5 received key code when said key verification procedure results in an acceptance of said received key code.

32. The apparatus according to claim 31, further comprising  
means for causing said analysis apparatus (14) to display a list of  
10 condition monitoring functions with an indication of whether an individual condition monitoring function is disabled or enabled.

33. The apparatus according to any of the preceding claims, further comprising  
means for causing said analysis apparatus (14) to enable a user to buy usage  
15 of a selected condition monitoring function (S130).

34. The apparatus according to any of the preceding claims, wherein  
said logger is adapted to register use of a first condition monitoring  
function a first rate; and  
20 said logger is adapted to register use of a second condition monitoring function at a second rate.

35. The apparatus according to claim 34, wherein  
said second rate is such that use registered at said second rate causes a higher  
25 cost per unit of usage than use registered at said first rate.

36. The apparatus according to claim 34, wherein  
said second rate is such that use registered at said second rate causes a lower  
cost per unit of usage than use registered at said first rate.

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37. The apparatus according to any of the preceding claims, wherein:  
said registered use is a parameter indicative of a number of executions of at  
least one of said condition monitoring functions (F1, F2,Fn).

- 5 38. The apparatus according to any of the preceding claims, wherein:  
said registered use is a parameter indicative of an extent of time.